From:	ANDERSON Jim M
To:	Kristine Koch/R10/USEPA/US@EPA
Cc:	Chip Humphrey/R10/USEPA/US@EPA; GAINER Tom; MASON Bill; MCCLINCY Matt; OBRIEN Audrey; PETERSON Jenn L; POULSEN Mike; ROICK Tom
Subject:	RE: EPA PH Clean Fill Requirements
Date:	04/15/2011 01:58 PM

Kristine,
I'm not going to be able to get thru your response to my comments today. Can I get them to you by the end of next week?
Jim

-----Original Message-----
From: Koch.Kristine@epamail.epa.gov [mailto:Koch.Kristine@epamail.epa.gov]
Sent: Thursday, April 14, 2011 12:34 PM
To: ANDERSON Jim M
Cc: Humphrey.Chip@epamail.epa.gov; GAINER Tom; MASON Bill; MCCLINCY Matt; OBRIEN Audrey; PETERSON Jenn L; POULSEN Mike; ROICK Tom
Subject: Re: EPA PH Clean Fill Requirements

Jim - Thank you for DEQ's thorough review of this table. We have tried to address all your comments (see responses in bold below). If you want to discuss further, please give me a call or send me an email.

Regards,

Kristine Koch
Remedial Project Manager
USEPA, Office of Environmental Cleanup

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From: "ANDERSON Jim M" <ANDERSON.Jim@deq.state.or.us>
To: Kristine Koch/R10/USEPA/US@EPA, Chip Humphrey/R10/USEPA/US@EPA
Cc: "ROICK Tom" <ROICK.Tom@deq.state.or.us>, "MASON Bill" <MASON.Bill@deq.state.or.us>, "OBRIEN Audrey" <OBRIEN.Audrey@deq.state.or.us>, "MCCLINCY Matt" <MCCLINCY.Matt@deq.state.or.us>, "GAINER Tom" <GAINER.Tom@deq.state.or.us>, "POULSEN Mike" <POULSEN.Mike@deq.state.or.us>, "PETERSON Jenn L" <PETERSON.Jenn@deq.state.or.us>
Date: 04/08/2011 12:29 PM
Subject: EPA PH Clean Fill Requirements

Kristine & Chip,

Thanks for sending us EPA's draft Clean Fill Requirements & allowing us to review it. I have several general comments/questions & a number of minor typos (which may actually be my misunderstandings). Once again, your work is thorough, comprehensive & high quality.

General Comments

1) Purpose of the EPA's Clean Fill document- Based on our recent conversations, I think I'm clear on how EPA plans to use these fill requirements. That is, they would be applied where EPA is in the Lead Agency role in the Portland Harbor (PH) area. This would include sites like US Moorings, Triangle Park, or perhaps most importantly as material for in-river sediment caps. DEQ has our own draft Clean Fill Values that we're trying to finalize & that we're currently using in a limited sense…, so I suspect you're not anticipating that DEQ use your EPA values for our upland work rather than ours. EPA does not expect DEQ to use these numbers in the uplands, but would expect that they be used by DEQ for bank and beach areas, or at least the lowest value between EPA and DEQ values. Ideally they'll be the same. Yes, but I have noticed that there are a number of differences.

> I see from your 1st footnote that "These are requirements for Clean Fill with unrestricted placement." To me, that means that fill should not contain contaminants that exceed the most conservative protective levels (or exceed background concentrations as appropriate) for human receptors…, & eco terrestrial & aquatic receptors. Yes, that is the intent.
>
> With all that said, the one column of screening-level values (SLVs) I see missing in your table is toxicity values for terrestrial eco receptors…, i.e., soil toxicity values for birds, plants, mammals, & invertebrates. DEQ has soil toxicity SLVs in our 2001 Level II Eco Risk Assessment (ERA) guidance (found at the web link below). Most of these SLVs are from Oak Ridge National Lab. I should also note that our SLVs are old, & we plan to update them with a revision to our ERA hopefully by the end of the year. Thanks, I'll

add these to the table. We can always update them if you publish new numbers. I notice that these only apply to soil and not sediment, so I'll add in a footnote for that. I also added a separate column for the freshwater sediment values from this document.

http://www.deq.state.or.us/lq/cu/ecorisks.htm

2) Is the potential fill material solid waste?- One of key components in Oregon's definition of "solid waste" is that it's useless, unwanted or discarded material (excess, useless, or discarded by the generator). So, for example, if it's soil/gravel mined from a quarry that hasn't been impacted by release(s) of hazardous substances…, it's a "product" & not solid waste. This is one of the reasons Oregon considers even clean sediment dredged for navigation maintenance purposes (as opposed to mining sand/gravel sediment…, a "product") to be solid waste…., i.e., the clean sediment dredged for navigation maintenance purposes isn't a product, it's excess material.

The term "clean fill" is somewhat problematic. To try to best explain the way I see the problem…, let me use the term "imported material" (as opposed to "clean fill") to mean material generated from one site, but used at another site. If the "imported material" is a "product" (& not impacted by release(s) of hazardous substances, as defined above), then it's not solid waste & can be generally used without restrictions. If on the other hand, the "imported material" is a solid waste (i.e., not a "product")…, but is below DEQ Clean Fill requirements (i.e., requirements that should be protective of human health & the environment)…, then there's just no permit required to use the "imported material" as fill…, but it's still a solid waste. Furthermore, if the "imported material" is a solid waste, but exceeds DEQ Clean Fill requirements, then it still could possibly be placed at another site (i.e., a different site from which it was generated) under a Solid Waste Letter of Authorization (OAR 340-093-0050) or DEQ's Beneficial Use of Solid Waste rules (OAR 340-093-0030 thru -0120). A further complication is that DEQ Clean Fill requirements are draft…, & we're currently working on trying to finalize our Clean Fill requirements.

I've made the following changes to footnote #1. Let me know if this is ok or you have any edits.

(1) These are requirements for Clean Fill with unrestricted placement.
Project Managers may use other values in the tables as long as they substantiate in the record the rational for accepting fill with higher values and follow the ODEQ requirements discussed below:
-Fill material that was mined for the purpose of "imported fill" and meets the clean fill numbers does not need approval for use.
-Fill material that is excess use material (e.g., discarded, unused, excess material) or treated sediments or soils are solid waste under ODEQ Rules. If this material meets the clean fill numbers, not permit is necessary. However, the material may still be used as fill by obtaining a solid waste authorization letter (OAR 340-093-0050) or a beneficial use determination (OAR 340-093-0030 thru -0120). from Oregon DEQ.

So, what does this mean as far as a comment to your table? 1st, simply that I think it's important for you to understand how we're looking at the issue. 2nd, since Oregon's Soil/Sediment Clean Fill Screening Table is still draft, we prefer EPA remove that column from your table. I don't have a problem removing the Oregon numbers from the table, but I included it because so many people were asking me how the numbers in this table compared to those numbers. It was just for convenience.

3) How could the LWG use EPA's table?- I think the LWG could use EPA's table in three ways. 1st, they could use it to verify that any "product" (i.e., not solid waste) they plan to use as "imported material" (see Comment 2) hasn't been impacted by releases.

2nd, the LWG could use EPA's table to designate solid waste as suitable "imported material"…, if the chemical concentrations in the "imported material" were below EPA's Clean Fill Requirement values. If the "imported material" is below EPA table values…, then there's just no permit required to use the "imported material" as fill…, but it's still a solid waste.

3rd, the LWG could use EPA's table as performance criteria for consideration of treatment alternatives in the FS. However, I don't think the LWG should categorically eliminate treatment alternatives simply because it would be hard & expensive to achieve the table requirements. There's benefit in simply reducing the mass of contamination thru treatment. Furthermore partial treatment may allow less expensive, more protective disposal options…, or could possibly allow the material to be used under DEQ's Beneficial Use of Solid Waste rules.

We agree with this.

4) DEQ updated background values- Currently DEQ has background values for naturally occurring inorganics…, i.e., metals. These values were developed in 2002. DEQ is currently updating those values, & we expect to have those values finalized by the end of the year. So while we expect to have new background values, the values cited in EPA's table are our current & appropriate values. Once these values are finalized, we can always update the table.

5) How you picked your values- This comment is just to verify that the value you picked for EPA's PH Clean Fill was either the lowest of any column's values with background for inorganics trumping lower, risk-based values. I ask this question because for Cr, Cu, Pb, Se, Ag, & Zn…, your Clean Fill value is background, but each element has higher risk-based SLVs. Shouldn't you use the higher risk-based SLV? Yes, I used the background numbers because if the fill is coming from naturally occurring geology in Oregon and the State has established background numbers for that geology, then there is no reason to require lower numbers, which would result in parties needing to treat "clean" soil.
It just seemed illogical to me.

6) DEQ background values- Of the 11 background values you listed, some are background values for soil…, some are background values for sediment. I think I understand (& agree with the logic) that if we have 2 different background values for 1 chemical (1 soil value & 1 sediment value)…, you'd choose the lower of the 2 values. If that's right, then why did you:

-Pick the soil value of 4ppm rather than the sediment value of 1ppm for Sb?

-Pick the sediment value of 7.9ppm rather than the soil value of 7ppm for As?

-Pick the sediment value of 0.2ppm rather than the soil value of 0.07ppm of Hg?

Thanks for catching these. Burt went and changed all my table numbers and I tried to change them back, but missed a few. It should be that the background numbers are used. I fixed this by writing in a logic equation rather than manually doing it so the correct number should be picked from the available choices.

7) Soil bioaccumulation SLVs- I think both the toxicity & bioaccumulation pathways should be considered for both soil & sediment for eco receptors. DEQ has toxicity SLVs for both soil & sediment…, & bioaccumulation SLVs for sediment…, but we don't yet have bioaccumulation values for soil. I understand EPA has some soil bioaccumulation values in your Soil Screening Levels documents (http://cfpub.epa.gov/ecotox/). I added these in.

I bring this comment up, not to recommend that you include soil bioaccumulation values in your Clean Fill number, but rather to ask you whether you're considering this pathway & these values. We're asking ourselves whether we should update our eco soil SLVs to include the bioaccumulation pathway. As you know, we are considering all pathways with receptors to river sediments, including nearshore and beach placement. We would also consider upland soils where EPA is the lead.

8) Portland Harbor Risk-based Concentrations (RBCs)- Hopefully the PH risk assessments will be finalized this year. The risk assessments should include PH-specific RBCs. I think we should be able to consider these PH-specific RBCs in our decisions regarding fill material used in PH. Yes, we intend to update the table with these.

9) WDOE Marine SQSs & LAETs- Are marine sediment SLVs appropriate to use in Portland Harbor? These WDOE values are the values used in EPA's Clean Fill column for HPAHs, LPAHs, total benzofluoranthenes, benzoic acid, benzyl alcohol, hexachlorobenzene, 2,4-dimethylphenol, 2-methyl-phenol, 4-methy-phenol, PCP, dibenzofuran, DDD, DDE, & DDT. We included these because neither Oregon nor Washington have SQS for freshwater sediments.

Typos

1) Compounds- "Acenapthene" & "acenapthylene" are mis-spelled. I think the correct spellings are "acenaphthene" & "acenaphthylene". corrected.

2) PEC & TEC Values- I assume the PECs & TECs in EPA's table come from MacDonald, et al 2000 "Development and Evaluation of Consensus-Based Sediment Quality Guidelines for Fresh Water Ecosystems".
That publication does not include: PECs &/or TECs for Se, Ag, 2-methylnaphthalene, acenaphthene, acenaphthtylene, benzo (k)fluoranthene, indeno(1,2,3-cd)pyrene, hexachlorobenzene, bis (2-ethylhexyl)phthalate, pentachlorophenol, phenol, Aroclor 1254, 2,3,7,8-TCDD, & aldrin…., but PECs or TECs for these chemicals are not included in the cited MacDonald article. I'm not clear what you're trying to say with this comment. Not all the PECs and TECs were from the MacDonald paper; some were taken from T4 and some from McCormick & Baxter. The EPA table lists the DDT PEC as 0.0692ppm, & it should be 0.0629ppm. corrected. The EPA table lists the dibenzo(a,h)anthracene TEC as 33ppm, & it should be 0.033ppm. corrected.

3) Residential Soil RSLs- Cr RSL of 280ppm…, Hg RSL of 4.3ppm not 5.6ppm, naphthalene RSL of 3.9ppm not 3.6ppm, benzyl alcohol RSL of 31,000ppm not 6,100ppm, & no RSL for total PCBs.

For RSLs, you should be looking at the 2009 tables. The numbers I have are correct. I've attached a copy of the table for your convenience.

(See attached file: master_sl_table_run_DECEMBER2009.pdf)

4) Industrial Soil RSLs- Cr RSL of 1,400ppm, Hg RSL of 24ppm not 34ppm, naphthalene of 20ppm not 18ppm, benzyl alcohol RSL of 310,000ppm not 62,000ppm, & no RSL for Total PCBs.

For RSLs, you should be looking at the 2009 tables. The numbers I have are correct. See attached table, above.

5) Total cPAHs- What literature source are you using for the value of 3.22ppm? I don't have a value for this. Maybe it was fixed with the formula.

6) Hexachlorobenzene- Why use the value of 0.022ppm when you include a lower value 0.019ppm? Again - formula fixed this.

Jim Anderson

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